2004
WATER DIVISION ANNUAL REPORT

Wisconsin Department of
Natural Resources

This Annual Report is for the calendar year from January 1 to December 31 of 2004.

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2004 Water Division Annual Report

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A Note from Water Division Administrator, Todd Ambs...

"Protecting Wisconsin's water resources is arguably one of the most important tasks in state government, for our health, for our economy—particularly our $12 billion tourism economy—and for our priceless quality of life. The citizens of Wisconsin deserve to know what we're doing to effectively and efficiently manage their water resources."

Todd Ambs, DNR Water Division Administrator

Our economy, our quality of life, and our very identity are interdependent with our water resources.

The Wisconsin DNR's Water Division is the most comprehensive in the nation, encompassing all of our different types of water resources—from small wetlands to Great Lakes, groundwater to drinking water, specific fisheries and beaches to entire watersheds. No other state has such an integrated program.

Here in Wisconsin, the water belongs to everyone.

Our waters are held in trust for all of us to enjoy. As citizens of Wisconsin, we have a collective responsibility to protect our water resources. The funds Wisconsin invests in its water resources are critical because many of these state funds are maximized through matching federal dollars. Of the combined total, a significant portion goes directly to local grants given to you—the people of Wisconsin—to enhance and protect waters important to you.

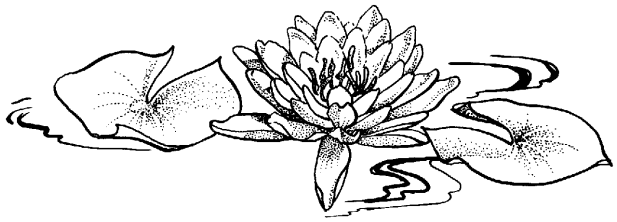
The Water Division's Four Objectives for the Waters of Wisconsin:

To do the best job possible in managing these valuable water assets on a tight budget, the Water Program has refocused attention and resources on four main objectives:

1. Protecting drinking water and groundwater resources for both human and ecosystem health
2. Enhancing and restoring outstanding fisheries in Wisconsin's waters
3. Fully implementing the Clean Water Act in order to achieve the goal of fishable and swimmable waters throughout Wisconsin
4. Protecting the waters of Wisconsin that are held in trust for all people of the state through the Public Trust Doctrine

Why are these objectives so important?

Wisconsin is woven from fabric drenched in water. In fact, our state's water resources may be more vast than we had imagined. New satellite and mapping technology that more accurately calculates waterbody sizes suggests that Wisconsin has 84,474 miles of streams, not 57,000 as previously thought, and more than 15,000 lakes totaling 1.2 million acres. Add to those water resources 5.3 million acres of wetlands and enough groundwater to cover Wisconsin to a depth of 100 feet. These statistics help anchor the state's status as one of the nation's most abundant water wonderlands. However, though we are water-rich compared to many states, pockets of Wisconsin are experiencing serious groundwater depletion and are facing contamination issues. Many of our surface waters are showing noticeable impacts of polluted runoff. These and many other impacts to our waters make good management of these resources imperative.



Wisconsin's Border Waters Receive Special Emphasis:

In addition to our numerous inland waters, Wisconsin is also defined by the great waters that form our state borders: Lake Superior, Lake Michigan, and the Mississippi River. Because of the scope and scale of activities needed on these waters, the Department recognizes the necessity of focusing specific work units to address these resources. Thus, this document also contains sections highlighting the newly created Office of the Great Lakes and the Mississippi River Unit, which serve the following goals:

- To implement a comprehensive program to protect the Great Lakes bordering Wisconsin, and work with other states and provinces to identify problems and solutions using a regional approach.
- To conserve, protect, and restore the valuable natural resources of the Mississippi River along our Wisconsin border with special emphasis on fisheries, wildlife, water quality and vegetation.

Strategies for Success:

In order to meet all of the above objectives for our statewide water resources, two overarching strategies were developed during 2004. These will be implemented, refined and adaptively managed in the coming years.

- The *Water Resources Monitoring Strategy for Wisconsin* re-examines past monitoring efforts and redirects tight resources toward priority needs, more comprehensive coverage, and more efficient monitoring designs. A Water Division Monitoring Team was established with resource-specific subteams to provide technical advice. In addition, the strategy places special emphasis on using citizen monitoring efforts to meet Department data needs. This evolving effort will increase the Water Division's ability to make sound management decisions in our everyday quest to improve Wisconsin's water resources.
- The *Shorelands & Shallows Strategy* was also completed in 2004, in recognition that these precious areas—necessary for flood and water quality protection, habitat, and recreational opportunities—continue to be lost and degraded. This strategy presents the goals of protecting ecosystem functions, structure, and composition, and delineates ways for the Department, in conjunction with the public and other partners, to begin meeting these goals.

This document serves as our "report card" to you, the public.

This report showcases some of the many accomplishments of Water Division staff in 2004. As on-the-ground examples of the impact of our work, we highlight one success story in each of our four objective areas. We continually strive to do the best possible work we can, to ensure that all citizens can enjoy the fresh, clean, beautiful waters of Wisconsin.

Protecting drinking water and groundwater resources for both human and ecosystem health

Success Story

Safeguarding Well Water

One of the Water Program's key missions is to protect health through ensuring safe drinking water. The Water Program regulates both well drillers and pump installers to ensure that the 17,000 new wells drilled each year are installed by licensed operators that meet safety standards. Many of the enforcement cases pursued each year result in repair or replacement of affected homeowners' unsafe wells. And, well drillers themselves recognize the importance of ensuring that safety standards are met. Said one spokesperson, "I think because of the DNR we are definitely drilling more environmentally safe wells." Several recent cases in which licensed and unlicensed well drillers have been convicted of installing unsanitary wells that fail to meet code requirements highlight the importance of these safeguard programs.

Despite general abundance of groundwater in Wisconsin, there is growing concern over the availability of good quality groundwater.

High-population areas like the Fox Valley, Waukesha, and Madison are experiencing drops in the water table of up to 300 feet.

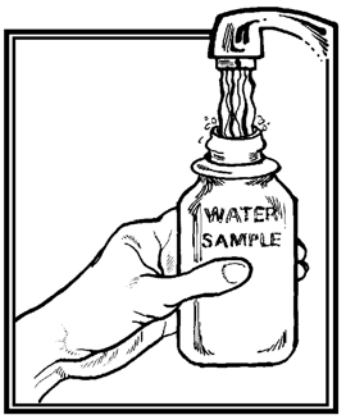
Groundwater use statewide grew from 570 to 804 million gallons per day from 1985 to 2000.

Linking Wells to Water Quantity: Groundwater Quantity Legislation Passed

On Earth Day, April 22, 2004, Governor Jim Doyle signed a new groundwater protection law that expands the DNR's authority to consider environmental impacts of high capacity wells when deciding whether to approve a high capacity well application. This law takes the first step in addressing water quantity management on a regional level. Significantly, this legislation recognizes for the first time the link between surface water and groundwater, and that all wells have an impact on groundwater quality and quantity. Because it includes an adaptive management approach, we are given the opportunity to adjust as we learn more.

Preventing Drinking Water Contamination: Source Water Assessment Program Completed

The Department completed its Source Water Assessment Program in 2004. The program, mandated by the 1996 amendments to the federal Safe Drinking Water Act, required assessments of all groundwater and surface water supplied public water systems. In Wisconsin there are over 11,000 of these systems, serving over 4 million citizens. The assessments analyze how susceptible these systems' water supply is to contamination, and make recommendations on how to address those threats. In addition to the assessments, the Source Water Assessment Program also provided state-of-the-art regional groundwater flow modeling studies for Wisconsin's 20 most-populated counties, and a searchable dataset containing over 350,000 digital well construction reports. These tools show us how groundwater flows in these areas and where our impacts are highest, thus facilitating source water protection and groundwater protection goals for years to come.



Saving Money and Increasing Inspections: County Contracts for Water System Surveillance

The Safe Drinking Water Act requires DNR to conduct a surveillance program for all public water systems in Wisconsin, including about 9,000 restaurants, campgrounds, churches, and commercial facilities. In an effort to conserve staff resources the Department has, for the last 10 years, contracted with 13 county health agencies to conduct inspections at over 2,000 of these small systems. These health agencies already conduct routine health inspections at many of these systems, so they could take on these new drinking water duties at a reasonable cost to the state. During 2004 this partnering effort was greatly expanded to cover 1,344 additional systems in 11 new counties. The resulting partnership has been outstanding. Not only has this effort freed DNR staff to deal with more complex systems but it has also increased these small systems' compliance with monitoring requirements. Licensed sanitarians instead of system owners take the required drinking water samples and see that they are properly submitted to laboratories for analysis. Violations of monitoring and reporting requirements in these counties are significantly reduced and state intervention with the system owner is lessened.

Ensuring Safe Water for Small Communities: Small System Operator Certification Enacted

Amendments to the Safe Drinking Water Act require that all of Wisconsin's 1420 small water systems for entities such as condominiums, mobile home parks, factories, and schools must have certified water system operators by March 2005. DNR responded to this challenge by partnering with several external associations, small system experts and consulting firms to develop a training and testing program for small system certification. The resulting partnership has trained and certified operators for more than 92 percent of the systems at no cost to small water system owners or operators.

Protecting Residents from Risky Wells: Well Inspections & Enforcement Action

To protect homeowners from health risks related to faulty well construction, DNR has increased up-front inspections of newly constructed wells before they are put into use, and is taking action on violations of safety standards. Improperly constructed wells are not only cause for concern for the individual well owner, but they can also become direct conduits through which contamination reaches aquifers supplying neighboring properties. The results of the increased inspections have been significant in preventing improper practices: the number of notices of violation issued has more than doubled from 82 between 1995-1999 to 198 between 2000-2004. During this same time period, the number of cases referred to the Department of Justice for prosecution rose from four to 17. Measures such as these help support one of DNR's key missions: protecting public health by ensuring safe drinking water for all citizens.

About 17,000 new drinking water wells are drilled every year in Wisconsin.

Two thirds of Wisconsinites get their drinking water from groundwater, through public or private wells.

Success Story

Super Stream Makeovers

Wisconsin has over 15,000 documented inland lakes, and 84,474 miles of streams and rivers.

The Plover River in Marathon County is one of several that received an "extreme makeover" this year, through the combined efforts of the Water Program, Trout Unlimited and willing landowners. Through the use of numerous state-of-the-art stream restoration techniques, 5,000 feet of the Plover River was restored. Where once the main channel had filled up with sediment reducing the average water depth to only 1.28 feet, the stream bottom is now a mixture of sand and gravel, there is a substantially increased amount of overhead and mid-channel cover, and expansive areas of backwater have been created. Significantly, the average water flows have also increased. Stream surveys are planned to evaluate this habitat for brook trout in an area that was previously uninhabitable for trout.

Maintaining an Outstanding Fishery: A Commitment to Excellence

48% of Wisconsin residents fish, though not necessarily every year.

Non-resident anglers spend more days fishing in Wisconsin than any other state but Florida.

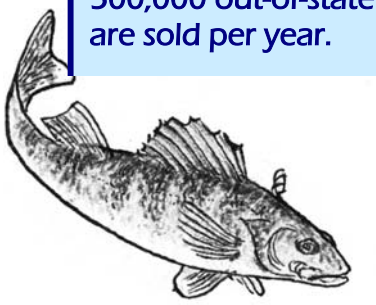
Wisconsin offers some of the country's best fishing. About 90 percent of Wisconsin's waters support naturally self-sustaining fish populations; DNR hatchery personnel give a helping hand to the rest. DNR fisheries management staff pursued an array of activities in 2004 that benefited fish, anglers and the aquatic environment. The Bureau maintains a field network of fish biologists, technicians, and aquatic habitat specialists across Wisconsin. Ninety-three percent of these staff are stationed in local offices and fish hatcheries—so they're "where the work is".

Following are highlights of the 2004 work year, resulting in healthy habitat and great fishing!

- Produced 20 million fry and 11 million larger fish for stocking through the 13 state fish hatcheries and rearing stations, egg collection weirs, and fish production ponds. This enabled the stocking of over 10% of Wisconsin's waters (supplementing the 90% of waters in Wisconsin that are naturally reproducing).
- Significantly improved 28 miles of trout stream habitat statewide.
- Improved habitat for warmwater fish on dozens of waters.
- Worked with others to acquire 1,102 acres for boat access/state public fishery areas.
- Sampled 769 stream sites and 403 inland lakes and Wisconsin waters of Lakes Superior and Michigan.
- Monitored and evaluated statewide fish populations and angler/commercial harvests.
- Sampled fish populations for mercury, PCBs, and other potentially harmful contaminants.
- Carried out federally-mandated monitoring of walleye and musky populations, as well as state and tribal harvests within the ceded territories (860 walleye and 665 musky lakes).
- Trained a network of aquatic education volunteers that sponsored kids fishing clinics. Worked with over 15,000 youth on water education activities.
- Maintained a rich web site (http//www.fishingwisconsin.org) that has fish population and creel survey databases, places to go fishing, lands and access directories, recent news releases, staff directories, searchable fish stocking information and links to other Water Program publications.

$21 billion is spent in local Wisconsin communities by anglers.

1 out of 5 Wisconsinites buy fishing licenses, & 500,000 out-of-state licenses are sold per year.



Netting a Great Catch: Record-Level Fishing

Our actions helped contribute to a great fishing year!

- Highest Lake Michigan chinook harvest since 1987
- Second highest walleye catch rates in Northwoods in 15 years
- 188 lb. 79.5 in. lake sturgeon speared on Lake Winnebago
- Record 36 lb. 8.9 oz. brown trout caught in Lake Michigan
- Record 7 lb. 6.9 oz. bowfin speared in the Mississippi
- Record 48 lb. 3 oz. common carp speared in Lake Eau Claire
- Record 73 lb. 1.6 oz. bigmouth buffalo caught on Lake Koshkonong
- Record 1 lb. 13 oz. northern hog sucker caught on the Fox River
- Record 4 oz. 8.5 in. creek chub caught in Honey Creek, Milwaukee Co.

Studies published in national scientific journals on Wisconsin's aquatic habitat management clearly underscore the vital link between good aquatic habitat and good fishing. While future development is inevitable, these studies demonstrate the importance of sound planning and development practices to protect critical areas for aquatic life.

- Musky populations do well only when 20% or less of their habitat is developed; they do poorly as soon as 40% of their habitat becomes developed.
- Bluegill populations are 250% higher in lakes with no development than in developed lakes.
- Trout populations are eliminated in watersheds where as little as 11% of the land is made impervious to water (paving, roofs, urban sprawl etc.).

Increasing the Viability of Wisconsin's Aquatic Habitat: Improvements Achieved in 2004

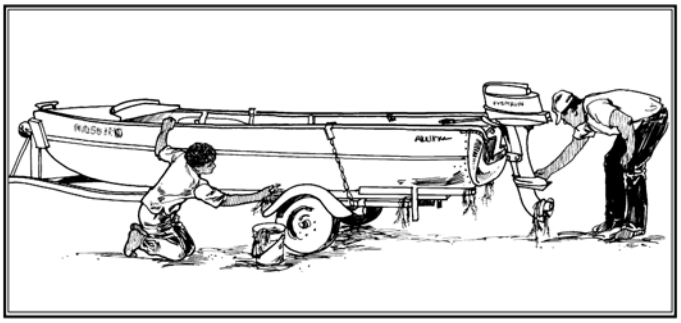
In 2004, Fisheries Management and Habitat Protection staff pursued an array of activities that benefited both fish and anglers. Here is just some of the important work that was completed this year:

- Awarded over $3 million in planning and protection grants for lake and river projects, as well as invasive species grants, to more than 160 communities (see page 10 for more details).
- Met with thousands of lake and riverfront property owners to advise them on how to locate, design, and build their shoreline projects so that damage to critical fish habitat is minimized.
- Completed many "small" but cumulatively important projects, such as the Big Spring Creek project in Grant and Iowa counties. By acquiring 77 acres and 4,000 feet of frontage in the middle of two existing parcels having public easement, anglers can now enjoy 5 continuous miles of excellent fishing on a Class 1 trout water.
- Did "extreme makeovers" on aquatic habitat as needed, such as the success story described earlier on the Plover River in Marathon County.
- Took preventive actions as necessary, such as the effort to prevent 200,000 gallons of liquid manure from causing a major fish kill of brown and rainbow trout on Dougherty Creek in Green County.

Preventing the Spread of Exotic Species: New "Clean Boats—Clean Waters" Program

A new program to combat the spread of aquatic invasive species has been launched! The Clean Boats, Clean Waters program uses volunteers to inspect watercraft for invasive 'hitchhikers' like zebra mussels and Eurasian watermilfoil before they enter Wisconsin waters. Wisconsin DNR, UW-Extension and Wisconsin Association of Lakes assisted with a series of 14 statewide workshops in the summer of 2004 to provide training to over 350 volunteers in 38 counties on how to organize a volunteer watercraft inspection program. As of March 2005, volunteers inspected 5,079 boats and found that 3% of all inspected boats had aquatic plants attached when approaching the landing, while 17% of the boats had aquatic plants attached as the boat pulled away from the landing. In addition, surveys showed that many boaters were not aware of the role they played in moving aquatic plants and animals from one waterbody to another. The program is continuing its valuable work with more training workshops in 2005.

Wisconsin has 575,000 registered boats – about one for every ten residents.



Renovating A Critical Fish Hatchery: Wild Rose State Fish Hatchery Updates Approved

The aging Wild Rose State Fish Hatchery, first built in 1908, will be undergoing badly needed renovations and an expansion. Wild Rose is a critical facility for supplying Wisconsin sport fish statewide, producing fully 27 percent of the state's trout and salmon, 64% of northern pike, and 100% of lake sturgeon and spotted musky. Already a major producer for Great Lakes stocking, the expansion will allow for increased production and new species. Blueprints will be drawn in 2005 and groundbreaking is scheduled for winter or spring of 2006.

Fully implementing the Clean Water Act in order to achieve the goal of fishable and swimmable waters throughout Wisconsin

Success Story

Saving Soil in Brown County

A Brown County creek degraded by years of polluted runoff from farms and urban areas is getting some much-needed protection. A Wisconsin Great Lakes Protection Fund grant enabled the county's Land Conservation Department to secure commitments from willing landowners that cut the soil, fertilizer, manure and other pollutants carried into the stream. Participating landowners signed contracts agreeing to maintain for perpetuity a 35-foot wide strip, or "buffer," next to Baird Creek where they won't plant crops, plow or engage in any agricultural activities. The contracts protect 3.5 miles of stream forever. Shaped and seeded with grass using Wisconsin Land and Water Grant funds, the buffer strips reduce excess nutrients and sediment entering the stream every year, improving water quality and fish habitat.

While point source pollution has been dramatically reduced over the last 30 years, the primary source of surface water pollution is now from polluted runoff.

Without preventative measures, runoff can carry contaminants from our lawns, streets, construction sites and farms directly to nearby waterways.

Managing Municipal Waste Safely: Sewage Overflows Addressed

Wet spring and early summer weather in Wisconsin contributed to well over 300 sanitary sewer overflow events in 134 different communities during 2004. Although some overflows are likely unavoidable due to severe flooding or accidents, DNR takes action when necessary to ensure that communities are taking the steps needed to prevent future overflows. In response to the events in 2004, the Water Program issued Notices of Violation to about 100 communities and continues to follow-up on those notices. In many instances, municipalities are actively working on projects to reduce the amount of stormwater and groundwater entering the sanitary sewer systems. In an effort to correct ongoing problems within the Milwaukee Metropolitan Sewerage District service area, 29 municipalities were referred to the Wisconsin Department of Justice for prosecution. That enforcement action is still in process. Several other communities outside the Milwaukee Metropolitan area also will likely be referred to DOJ for further action.

Addressing and Preventing Fish Kills: Improved Regulations & Enforcement Action Implemented

DNR is working both short- and long-term to resolve fish kill problems caused by improper manure spreading. In the long term, DNR is implementing the Polluted Runoff Rules passed in 2002 that mandate, among other things, certain practices that would minimize the frequency of such events. Revisions to additional rules regulating the state's largest livestock operators are also underway, and will put in place preventative measures to reduce winter landspreading of manure. Meanwhile, DNR is working with county land conservation departments on educating livestock producers on best management practices, and is pursuing enforcement action against those operations where negligence or repeat offenses have occurred.

Leading the Nation in Timely Permit Issuance: Wastewater Permit Program Maintains High Standards

Wisconsin is a national leader in issuing timely wastewater permits for water quality. This important factor assures that permittees incorporate new scientific, technologic, or regulatory advances that afford better protection for lakes, rivers and groundwater. The Water Program continues to process wastewater permits faster than any other state in the upper Midwest and is among the fastest in the nation.

Cleaning Up Hazardous PCBs from the Fox River: North America's Largest Dredging Project Underway

Historic wastewater discharges from industry left a legacy of chemical contaminants buried in the mud at the bottom of several Great Lakes harbors and tributaries. After decades of investigations and study on how best to clean up contaminated areas, work began in earnest in 2004 on a number of sites. Hydraulic dredging of PCB-contaminated sediment started in the Lower Fox River at Little Lake Butte des Morts. Over the next decade as much as 7.25 million cubic yards of contaminated sediment will be removed from a 39-mile stretch of the Lower Fox River. On the Sheboygan River, the cleanup of a 14-mile stretch of the river, as well as adjacent soil and groundwater, is expected to take seven years. In the Lake Superior Basin, cleanup of petroleum-laden sediment in Newton Creek has been completed and 50,000 cubic yards of contaminated sediment are slated for removal from the Hog Island Inlet of Superior Bay in 2005.

> The Lower Fox River has the most paper mills of any river in the world.
>
> The Fox River cleanup is the largest dredging project in North America.

Ensuring Consistent and Timely Enforcement for Violations: Watershed Enforcement Guidance Revised

In 2004, DNR launched an ongoing effort to assure the agency is taking consistent and timely enforcement action when permittees violate their permits or other laws. To support this effort, the Watershed Management Bureau revised and published the guidance it gives field staff and others to follow in responding to violations. The bureau also is developing educational materials and providing training for staff with permit compliance responsibilities.

Preserving the Best of Our Waters: Outstanding & Exceptional Resource Waters Protected

Wisconsin is blessed with a wealth of beautiful, high-quality waterways. 1,855 of these special places are designated as Outstanding or Exceptional Resource Waters (ORW/ERW)—equivalent to 6.7% of Wisconsin's 27,723 waterbodies. Because we are proud of these waters and understand the importance of protecting them, ORW/ERW waters receive special protections that limit new point-source discharges and are a priority for cost-sharing dollars aimed at reducing nonpoint pollution. In addition, water quantity concerns were addressed in 2004 with new legislation that granted ORWs/ERWs greater protection from surface water withdrawals. The list of waters designated as outstanding or exceptional is periodically updated. Several more high-quality waters will be added to the list in the coming months.

Identifying & Improving Impaired Waters: Wisconsin's 303(d) Impaired Waters List

Wisconsin is dedicated to improving the quality of those waterways that have experienced the greatest impact from human land uses. Under Section 303(d) of the federal Clean Water Act, 632 of Wisconsin's waters are listed as "impaired". However, the Water Program continued to make progress in 2004 regarding our 303(d) impaired waters:

- Wisconsin is marking over 25 years of efforts to implement best management practices through Priority Watershed and Targeted Runoff Management assistance. Over the past decades, a variety of these projects have improved our impaired waterways. One example of the success of this program is this year's removal of three segments of the West Branch of the Sugar River from the impaired list.
- A new effort to evaluate beaches was implemented, resulting in 11 of more than 100 Great Lakes beaches sampled being identified as impaired, as well as three inland state park beaches. Nine other new waterways were also added to the impaired list as a result of recent monitoring findings.
- The Water Program has accelerated its efforts to refine the criteria staff use to list impaired waters. This important effort will help assure that statewide staff and EPA are consistent in their determinations of which waters are listed as impaired.
- Over 40% of the waters listed as impaired are primarily or significantly impacted by polluted runoff—one of the most difficult forms of pollution to prevent because its sources are so disperse.
- Over one-third of the watersheds of listed impaired waters are participating in grant-funded cleanup efforts. The Water Program continues to partner with other DNR programs and local communities to provide grant funding across Wisconsin to implement best management practices in these watersheds.

Protecting the waters of the state that are held in trust for all the people of the state through the Public Trust Doctrine

Success Story

Better Shoreland Projects Benefit Residents & Resources

Conserving the natural features of our lakes, streams and wetlands often enhances development projects, rather than being a permit-process obstacle. DNR water management specialists strive to guide developers and individuals alike in how they can accomplish their property management objectives while conserving their water resources. Consider this report from a developer in the field: "Your department's input has created an end result that is superior to the results we would have settled for without the protection and incorporation of valuable water resources in our overall plan." The new rule standards also make it easier for individuals to achieve the same results as developers—as we heard from a resident on Spring Lake Creek who used our web-based project planning to design a stream-friendly crossing, fill out general permit forms, and get a permit the very next day.

Through the Public Trust Doctrine, Wisconsin's constitution ensures that Wisconsin's waters belong to everyone.

All citizens have the right to enjoy recreation, fishing, hunting, and the scenic beauty of our waterways.

Promoting Lake- & River-Friendly Designs: Faster Permits & Flexibility for Landowners Established

- **Act 118 Permits Streamlined & User-Friendly**—2003 Act 118 (a.k.a. the Jobs Creation Act) had the dual goals of speeding the permitting process while keeping the same level of lake and stream protection.
  - The Water Program's emergency rules created standards under which 50% of the projects that once required individual permits are now handled by a simpler general permit process or are totally exempt from permit review. Permanent rules that add even more general permits await legislative review.
  - Site visit audits of locations where exempt activities took place showed that these projects were in 100% compliance with exemption standards, demonstrating that these standards are easy to follow and can be employed with no impact to the resource.
  - In 2003, the average wait for a Chapter 30 permit was 47 days. Citizens who chose the general permit option in 2004 received a decision within 14 days under the new rules carrying out 2003 Act 118.
  - An initiative is also underway to create a joint permitting process for grading and stormwater projects, which will allow landowners to submit a single application and receive a joint decision on approval.
- **Lower St. Croix Riverway Rule Revised (NR 118)—**Final revisions to standards for the Lower St. Croix National Scenic Riverway became effective November 1, 2004. These revisions culminate a seven-year cooperative planning process between the National Park Service, Minnesota, Wisconsin, a citizen land use advisory group, local agencies, and the general public. The net effect of these changes will improve the clarity of the rule and consistency in application. It will increase landowners' ability to improve their properties in return for mitigation practices that will protect or enhance the natural character of the riverway. Municipalities along the riverway are now amending their ordinances to comply with the rule.
- **Shoreland Protection Program Revised (NR 115)—**The Water Program invested significant time and effort in 2004 preparing draft rule revisions to update the 35-year old rules that apply to shoreland development statewide. The revisions will provide more flexibility for landowners to modify structures within shoreland setbacks, in return for improving shorelands through restoration and mitigation practices. This proposal was developed after more than two years of work with a citizen advisory committee, eight public listening sessions, and thousands of public comments. It is expected that the rule will go to public hearing in July of 2005.

Helping Communities Help Themselves: Local Projects Funded

DNR grant programs enable communities across the state to make great strides toward protecting our water resources and increasing recreational opportunities. Here is a sampling of the wide variety of critical activities these grants make possible.

- **Awarded approximately 90 Runoff Management Grants totaling over $7 million** to control runoff from both urban and agricultural areas. Awarded to local governmental units, these funds are used for stormwater planning projects, construction of systems to reduce or slow stormwater, or implementation of rural practices to reduce agricultural runoff.
- **Awarded over 160 grants for Lake Planning, Lake Protection, River Planning, and River Protection, totaling over $3 million** to local governments and lake organizations. These grants are used to develop assessments and comprehensive management plans, educate citizens, acquire habitat and environmentally sensitive lands, control polluted runoff, and fund restorations of shorelands, wetlands, and in-stream habitat.
- **Awarded 83 Recreational Boating Facilities Grants totaling almost $7.5 million** to local units of government and qualified lake associations to assess, create, or improve boating access, purchase aquatic weed harvesting equipment, manage nuisance plants, and dredge channels.
- **Awarded 7 Municipal Flood Control Grants totaling almost $2 million** to protect life, health, and property from flood damage. Awarded to municipalities and metropolitan sewerage districts, to fund the purchase of property or vacant land, structure removal, and construction or other development costs.
- **Continued funding for 47 Priority Watersheds totaling almost $10 million.** These ongoing cost-share projects reduce polluted runoff in high-priority watersheds by improving cropping practices and barnyard management, implementing shoreland protection practices, and conducting wetland restorations.
- **New this year: Awarded 29 grants totaling nearly $500,000 to control the spread of zebra mussels** and other aquatic invasive species. This new grant program for local governments is the result of administrative rules written in 2004 to address this important issue.

Addressing Wetlands: Noteworthy Programs

- **Wetland Compensatory Mitigation Program for Developers—** This program provides a way for developers to compensate for unavoidable wetland losses by giving them the option to purchase 'credits' from a 'wetland bank'. Wetland banks restore ecologically significant wetlands and meet stringent wetland performance standards, and then receive compensation for their efforts through sale of credits to those who need to mitigate wetland losses. In 2004, staffing for this program was significantly reduced because of budget cutbacks, yet during that time a new mitigation bank was approved, 12 project-specific mitigation requests were approved and the average time for reaching a mitigation decision was 11 calendar days from the receipt of a complete application.
- **Wetland Fill Permit Update—**A total of 557 water quality certification decisions for wetland fill permits were made in 2004. Through negotiations to minimize damage to wetlands in ways that would allow projects to move ahead, 93% of the wetland acres for which fill applications were submitted were approved. Wetland fill permits were completed in an average of 47 calendar days from the receipt of a complete application.
- **Successfully Securing Federal Wetland Funds—**The Water Program was successful in securing several competitive grants from the U.S. Environmental Protection Agency which enabled many important projects to move forward. Several of these projects focused on enhancing our tracking and mapping systems for invasive plants and for wetland restoration projects. Wetland staff also use these funds to improve site assessment methodologies and to test methods for restoring degraded wetlands' valuable natural functions.

Success Story

"Zero Discharge" to Lake Superior

There are 6.5 million acres in Wisconsin's portion of the Great Lakes.

This averages out to over one acre of Great Lakes water per Wisconsinite.

The Water Program is pioneering new technology in wastewater treatment to demonstrate that "zero discharge" to Lake Superior is economically possible. A new state-of-the art wastewater treatment plant under construction near Bayfield will remove virtually all pollutants from wastewater before releasing it to Lake Superior, the most pristine of the Great Lakes. The "zero discharge" plant, the first of its kind in Wisconsin to exceed state and federal standards, is a joint project funded by grants from DNR and the U.S. Army Corps of Engineers, a low interest loan from DNR's Clean Water Fund, as well as by Bayfield and Pikes Bay sanitary sewer customers.

Keeping Our Great Lakes Great: New Office of the Great Lakes Established

On Earth Day 2004, Governor Doyle directed the Department of Natural Resources to establish an Office of the Great Lakes. Created through staff reallocation to this priority area, this Office is charged with implementing a comprehensive program to protect the lakes, identify problems and solutions, and serve as a contact point for the Great Lakes community. The Office of the Great Lakes is particularly focused on priority issues identified by the Council of Great Lakes Governors, which Governor Doyle now chairs. These issues include water diversions, exotic species introductions through ballast water exchange, contaminated sediment sites, nonpoint source impacts like loss of habitat or nutrient enrichment-induced algae problems, beach safety, and habitat and species restoration. Office of the Great Lakes staff are responsible for supporting the DNR role in the Great Lakes Commission, the Council of Great Lakes Governors, and the International Joint Commission; coordinating with state and federal agency Great Lakes programs and non-profits; developing Lake Michigan and Lake Superior restoration and protection action agendas; and managing Great Lakes project funding.

Ensuring Enough Water for the Future: Great Lakes Water Management Public Meetings a Success

The DNR's Office of Great Lakes held five public information open houses and comment meetings on the draft agreements among the Great Lakes states and Canadian provinces to update how they protect and manage the Great Lakes. Known as the Annex 2001 Implementing Agreements, the 2004 proposals update the regional management of Great Lakes water, particularly focusing on creating a process to protect the Great Lakes from diversions of water out of the Great Lakes Basin and consumptive use of Great Lakes water in the basin. More than 300 people attended the public comment meetings and over 6,500 postcards and letters were received commenting on the drafts. A large majority of respondents supported the agreements, with common themes including a desire for stronger water conservation methods and a simpler process for the Great Lakes management strategy overall. These comments were forwarded to the Council of Great Lakes Governors for further consideration.

Preventing Erosion to Lake Superior: Pilot Project Completed; Leads the Way to Broader Efforts

A successful pilot project to prevent bluff erosion to Lake Superior was completed this year and will serve as a template for additional efforts along Lake Superior tributaries. Eroding stream bank bluffs annually sent tons of soil into North Fish Creek, burying spawning areas for trout and salmon. A collaborative effort to prevent more erosion and re-establish spawning habitat is now paying off for the creek's fish and anglers. The University of Wisconsin-Madison Civil Engineering Department installed submerged structures (vanes) in the middle of the stream to deflect the current away from the banks. The U.S. Geological Survey, in cooperation with the UW, the Wisconsin Department of Natural Resources, Bayfield County, and the U.S. Fish and Wildlife Service, have been monitoring the project and found that the structures are working to prevent erosion, even during and after floods. DNR staff are working with others to install vanes at other tributaries to Lake Superior with similar bluff erosion problems.

Investigating Lake Michigan Algae Blooms: Cladophora Studies Underway

Stringy, smelly algae has been washing up on Great Lakes beaches in recent years in increasing quantities, causing concern to waterfront property owners, swimmers, government and tourism officials and others with a stake in lake health and beauty. Investigations by the DNR, University of Wisconsin – Milwaukee WATER Institute, and others around the Great Lakes have pointed to a complex relationship of light penetration, zebra mussels and phosphorus causing this problem. While studies continue to help us to better understand this problem, actions to reduce phosphorus will start to limit the nutrients available for algae growth.

Keeping Beaches Safe for the Public: Wisconsin's Beach Monitoring a National Model

Wisconsin was the first state in the nation to fully implement a beach monitoring program in accordance with criteria of EPA's BEACH Act, and is an EPA model for other states. In our second year of statewide beach water monitoring along the Great Lakes' coast, the Water Program worked to reduce beach users' risk of exposure to disease-causing microorganisms in water. DNR contracted with 15 local health departments for the 2004 beach season to conduct routine monitoring of 123 beaches along Lake Superior and Lake Michigan, with prompt public notification whenever bacterial levels exceed EPA's established standards. Outreach efforts were increased through redesign of beach notification signs in English, Spanish and Hmong. DNR and UW-Extension also produced an informational brochure and a statewide toll-free telephone service providing information on local beach conditions.

There are 192 beaches along the shoreline of Lakes Michigan & Superior.

60% of Wisconsin residents (3 million citizens) report that they go swimming outdoors.

Success Story

Award-Winning Island Reconstruction Pays Off for Anglers

By improving Western Wisconsin's border waters,

we're improving Western Wisconsin's economy.

Many island complexes along the Mississippi have been destroyed due to inundation from dams. Water Division staff are working to restore these islands and associated backwater habitat to renew important fishery areas. The Stoddard Islands project near Stoddard, Wisconsin has been so successful that it received the 2004 Award of Excellence from the Army Corps of Engineers, and was proclaimed one of the "Seven Wonders of Engineering" by the Minnesota Society of Professional Engineers. Since the project's completion in 1999, this island reconstruction transformed a decimated fishery to a tremendous one used by hundreds of people each day in nice weather. A similar project at Sunfish Lake near Dickeyville was completed in 2004 and is expected to yield similar returns once habitat becomes re-established.

Visioning the Future for the Mississippi River: Navigation & Ecosystem Long Term Plan Completed

After more than a decade, a report including an adaptive vision for 50 years of navigation improvements and ecosystem restoration on the Upper Mississippi and Illinois Waterway System is complete and headed to Congress for authorization. With this Final Integrated Feasibility Report, initial authorization is expected on the first 15-year implementation plan and could move through Congress this year. National funding for ecosystem restoration along the upper Mississippi, to be split among states, is expected at about $100 million annually, with an expected benefit to Wisconsin of over $10 million annually.

Restoring Large-Scale Ecosystems on the Mississippi: Restoration Efforts Accomplished

- **Habitat Enhancements through the Environmental Management Program (EMP) –** The EMP is a federal program for the Upper Mississippi River which has provided funds for habitat restoration and long-term resource monitoring since 1986. The 25th and 26th EMP projects are currently underway to enhance 1,200 acres along Wisconsin's Mississippi River border. This will supplement the 17,000 acres already benefiting from efforts completed under earlier EMP projects. As part of this effort, over 2 million bits of information have been collected at the six long-term resource monitoring stations to better understand the water quality, vegetation and fisheries trends in the Mississippi river. This information directs our restoration efforts to those areas that will have the greatest impact for the resource.

- **Reintroduction of Water Drawdown Cycles –** Research has shown that periodic drawdowns of water levels along the Mississippi to mimic natural cycles are essential for reinvigorating aquatic vegetative habitat. During 2004, coordination was completed for the second large-scale drawdown on the Upper Mississippi, scheduled to occur on Pool 5 during the summer of 2005. Results of this effort should yield improved aquatic vegetation on up to 1,500 acres.

Assessing Mississippi River Habitat, Fisheries & Wildlife: Noteworthy Projects

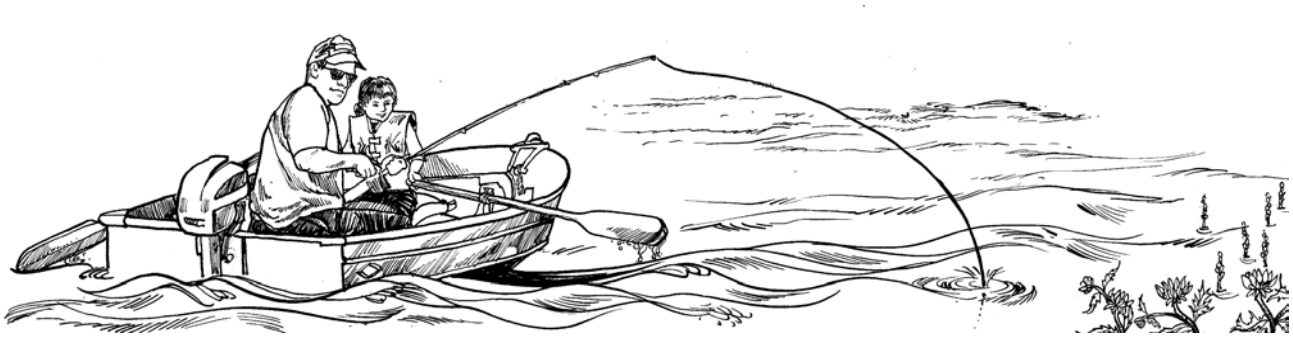
- **Monitoring Large Rivers through Environmental Monitoring & Assessment of Great River Ecosystems (EMAP-GRE) –** EPA provided funding in 2004 to begin a monitoring project for the three large rivers of the Midwest: the Mississippi, Ohio, and Missouri. The program will standardize data collection and comparison capabilities between these rivers to yield a better understanding of these critical ecosystems. Staff have completed the first year of monitoring on the Mississippi under this new program to provide consistent, standardized assessment and reporting under the Clean Water Act.

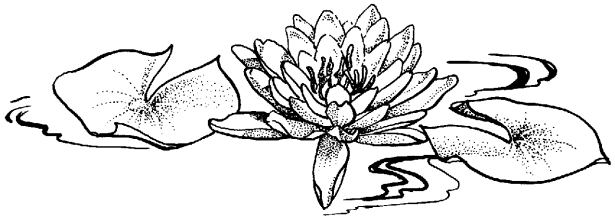
The 250-mile Upper Mississippi National Wildlife & Fish Refuge is the longest wildlife refuge in the United States.

- **Backwater Habitat Studies –** Mississippi backwaters are key wintering sites supporting Wisconsin's fisheries, but many backwater areas are diminishing. In an attempt to assess the quality and quantity of backwater wintering sites, electrofishing was conducted on over 500 sites from Pools 3 through 11. Water quality information will be coupled with this data to help define where wintering habitat is limiting for a variety of species that depend on these areas.
- **Action Plan for Cleaning Up Shared Border Waters –** A seven-year action plan was created in 2004 to identify impacts and clean-up efforts needed on Lake Pepin, Upper Mississippi River, Pool 4. Because Lake Pepin is one of the largest bodies of water receiving impacts from multiple states, the Minnesota Pollution Control Agency and Wisconsin DNR will be working together to address turbidity and nutrient problems in the lake.

In Conclusion...

- *This report is only a snapshot overview of the many activities undertaken by the Water Division in 2004. In addition to the key objectives and strategies highlighted throughout this document, the Division has developed specific, detailed goals for the biennium starting July 1, 2005. Tracking our progress through these goals as part of our work planning will provide even greater precision as we target our finite resources toward priority work for the betterment of Wisconsin's water resources.*





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